

Fiber-Optic Systems - Analog Transmitter

Model FO-ST

- Monitor Analog Signals at bandwidths from DC to 20 kHz
- EMI Hardened and validated for EMC at 200 V/m (46 dBV/m) from 500 kHz to 2 GHz
- Low-Power circuitry for operating >120-hours with 3 alkaline 'AA' batteries
- User selectable full-scale input ranges of ± 16 , ± 32 , and ± 48 VDC or Optional - User Defined
- Compatible with 2, 4 or 12-channel bench-top and 12-channel 19" Euro-rack Receivers



Description

The MSC model FO-ST is a versatile Fiber-Optic Analog Signal Transmitter that provides a means to transmit electrical signals over fiber-optic cables from remote sources in high electromagnetic fields or anechoic chambers to monitoring equipment in low field areas.

The FO-ST transmitter is EMI hardened and validated for EMC up to 200 V/m (46 dBV/m) at 500 kHz to 2 GHz. The transmitter monitors analog signal inputs at bandwidths from DC to 20 kHz. High "Z" input leads and EMI filter circuitry ensure EMC compatibility without compromising signal integrity. Selectable gain jumpers are used to configure the transmitter modules for full-scale input levels of ± 16 , ± 32 , and ± 48 VDC. Systems may also be configured to user defined full-scale inputs and outputs. Each 2-channel transmitter module is powered with 3 standard 'AA' alkaline batteries and is able to operate up to 120 continuous hours before replacing batteries.

Other MSC fiber-optic systems are available for monitoring audio, linear position, digital and light/lamps etc. Receivers are available in 2, 4 or 12-channel bench-top and 12-channel 19" Euro-rack configurations.

The FO-ST uses 820 nm wavelength multimode 62.5/125 μm , 100/140 μm or step-index 200 μm HCS fiber cables. SMA type 905 connectors are standard.

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SPECIFICATIONS

PARAMETER	SPECIFICATION
SYSTEM CHARACTERISTICS AND PERFORMANCE	
GENERAL	
Bandwidth	DC to 20 kHz (-3 dB)
Input Range 1 (± 16 Vdc)	
Resolution	< 16/mV
Stability	< 80 mV drift over specified temperature range
Input Range 2 (± 32 Vdc)	
Resolution	< 32/mV
Stability	<160 mV drift over specified temperature range
Input Range 3 (± 48 Vdc)	
Resolution	< 48/mV
Stability	<240 mV drift over specified temperature range
Over-Range Protection	± 100 V continuous and ± 350 V transient protection
Input Impedance	> 1 M Ω
Input Leads	Special High 'Z' type @ 5k Ω /ft - 18in minimum length
Power Source	3-AA Alkaline Batteries
Battery Life	continuous >4 days
PHYSICAL	
Channels	2 - Each w/jumper FS ranges of ± 16 , ± 32 , ± 48 VDC, or Optional - User Defined
Dimensions (L x W x H)	6.8x3.0x1.0 in (172x76x25 mm)
Volume	< 20.4 in ³ (<334.3 cm ³)
Weight	13 oz. (404 g)
Input Connector	BNC
Optical Connectors	SMA type 905
Optical Cables	820 nm wavelength multimode graded-index 62.5/125 μ m, 100/140 μ m, or step-index 200 μ m HCS (Hard Clad Silica)
Optical Cable Length	4921 ft. (1500 M) max
ENVIRONMENTAL	
Operating Temperature	-4° F to +185° F (-20° to +85° C)
Operating Humidity	95% R.H. max. non-condensing
EMC	300 V/m at 500 kHz to 1 GHz, 200 V/m at 1 GHz to 11 GHz, and 600 V/m (pulsed 5% duty-cycle & 5 μ s rise-time) 1 GHz to 2 GHz
CONFIGURATIONS	
Receivers are available in 2, 4 or 12-channel bench-top and 12-channel 19" Euro-rack configurations. Custom Receiver output scaling available.	

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